

Application No.: 10/713800
Docket No.: CH2893USNA

Page 3

Amendments to Claims

1. (Currently amended) A conduit having its surface or a portion of its surface coated with a fluid-repellent layer wherein said layer comprises, or is produced from, a ~~fluorocarbon silane or~~ a substantially aqueous emulsion; said emulsion comprises or is produced from (1) a fluorocarbon silane or its hydrolyzate, (2) water, and (3) ~~optionally a~~ surfactant, a silicon compound, and a catalyst which is an acid or base, or combinations of two or more thereof; said fluorocarbon silane has the formula $R_f-(CH_2)_p-Si\{-(O-CH_2CH_2)_n-OR^1\}_3$; said silicon compound is a silicate or an organoalkoxysilane; R_f is a C_{3-18} perfluoroalkyl group or combinations of two or more thereof; each R^1 is independently one or more C_{1-3} alkyl groups; p is 2 to 4; and n is 2 to 10.

2. (Original) A conduit according to claim 1 wherein said conduit is a nozzle.

3. (Original) A conduit according to claim 1 wherein said layer has a thickness of from about 0.1 nm to about 10,000 nm.

4. (Original) A conduit according to claim 2 wherein said layer has a thickness of from about 1 nm to about 1000 nm.

5. (Canceled)

6. (Canceled)

7. (Currently amended) A conduit according to claim ~~5~~ 3 wherein said fluorocarbon silane is perfluoro alkyl ethyl tris(2-(2-methoxyethoxy)ethoxy)silane, perfluoro alkyl ethyl tris(2-(2-(2-methoxyethoxy)ethoxy)ethoxy) silane, or combinations thereof.

8. (Currently amended) A conduit according to claim ~~5~~ 3 wherein said silicon compound is a silicate or organoalkoxysilane, said silicate has the formula of $Si-(R)_4$, each R is independently OCH_3 , OCH_2CH_3 , $(OCH_2CH_2)_mOCH_3$, $m=1-10$, or combinations of two or more thereof; said organoalkoxysilane has the formula of $R^2_qSi(OR^3)_{4-q}$, each R^2 is independently an alkyl group containing about 1 to about 10 carbon atoms; each R^3 is independently an alkyl group containing 1 to about 3 carbon atoms; and $q = 1-3$.

9. (Original) A conduit according to claim 8 wherein said fluorocarbon silane is perfluoro alkyl ethyl tris(2-(2-methoxyethoxy)ethoxy)silane, perfluoro alkyl ethyl tris(2-(2-(2-methoxyethoxy)ethoxy)ethoxy) silane, or combinations thereof.

Application No.: 10/713800
Docket No.: CH2893USNA

Page 4

10. (Original) A conduit according to claim 9 wherein said silicon compound is tetrakis(2-(2-methoxyethoxy)ethoxy)silicate, dimethyldimethoxysilane, methyltrimethoxy silane, methyltriethoxysilane, 3-aminopropyltriethoxy silane, N-(2-aminoethyl)3-aminopropyldiethoxy silane, 3-glycidoxypropyltrimethoxy silane, one or more partial condensation products thereof, or combinations of two or more thereof.

11. (Original) A conduit according to claim 10 wherein said surfactant is R_f^1 -CH₂CH₂-O-(CH₂CH₂O)₁₁-H, C₉H₁₉-C₆H₄-O-(CH₂CH₂O)₅₀-H, R_f^1 -CH₂CH₂SCH₂CH(OH)CH₂N(CH₃)₃⁺Cl⁻, C₁₂H₂₅(OCH₂CH₂)₄OSO₃⁻NH₄⁺, C₁₂H₂₇-C₆H₄-SO₃⁻Na⁺, or combinations of two or more thereof wherein R_f^1 is a C₃₋₁₈ perfluoroalkyl group.

12. (Currently amended) A conduit according to claim 6_4 wherein said fluorocarbon silane is perfluoro alkyl ethyl tris(2-(2-methoxyethoxy)ethoxy)silane, perfluoro alkyl ethyl tris(2-(2-(2-methoxyethoxy)ethoxy)ethoxy) silane, or combinations thereof.

13. (Currently amended) A conduit according to claim 6_4 wherein said silicon compound is a silicate or organoalkoxysilane, said silicate has the formula of Si-(R)₄, each R is independently OCH₃, OCH₂CH₃, (OCH₂CH₂)_mOCH₃, m=1-10, or combinations of two or more thereof; said organoalkoxysilane has the formula of R²_qSi(OR³)_{4-q}, each R² is independently an alkyl group containing about 1 to about 10 carbon atoms; each R³ is independently an alkyl group containing 1 to about 3 carbon atoms; and q = 1-3.

14. (Original) A conduit according to claim 13 wherein said fluorocarbon silane is perfluoro alkyl ethyl tris(2-(2-methoxyethoxy)ethoxy)silane, perfluoro alkyl ethyl tris(2-(2-(2-methoxyethoxy)ethoxy)ethoxy) silane, or combinations thereof.

15. (Original) A conduit according to claim 14 wherein said silicon compound is tetrakis(2-(2-methoxyethoxy)ethoxy)silicate, dimethyldimethoxysilane, methyltrimethoxy silane, methyltriethoxysilane, 3-aminopropyltriethoxy silane, N-(2-aminoethyl)3-aminopropyldiethoxy silane, 3-glycidoxypropyltrimethoxy silane, one or more partial condensation products thereof, or combinations of two or more thereof.

16. (Original) A conduit according to claim 15 wherein said surfactant is R_f^1 -CH₂CH₂-O-(CH₂CH₂O)₁₁-H, C₉H₁₉-C₆H₄-O-(CH₂CH₂O)₅₀-H, R_f^1 -CH₂CH₂SCH₂CH(OH)CH₂N(CH₃)₃⁺Cl⁻, C₁₂H₂₅(OCH₂CH₂)₄OSO₃⁻NH₄⁺, C₁₂H₂₇-C₆H₄-SO₃⁻Na⁺, or combinations of two or more thereof wherein R_f^1 is a C₃₋₁₈ perfluoroalkyl group.

Application No.: 10/713800
Docket No.: CH2893USNA

Page 5

17. (Original) A conduit according to claim 16 wherein said conduit is a ceramic, polyimide, or metal, or is produced from a ceramic, polyimide, or metal.

18. (Original) A conduit according to claim 17 wherein said conduit is an ink jet printer nozzle or a nozzle for a machine.

19-29. (Canceled)